

REMARKS

By this Reply, claims 24, 31-35, and 38-46 have been amended, claims 25, 26, 36, and 37 have been canceled without prejudice or disclaimer of the subject matter contained therein, and new dependent claims 47 and 48 have been added. Accordingly, claims 24, 27-35, and 38-48 are currently pending in this application. The new and amended claims are fully supported by the application as originally filed, and thus no new matter has been introduced by this Reply.

In the Office Action mailed May 16, 2011, claims 24-46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,467,368 to Celada et al. ("*Celada*") in view of U.S. Patent No. 4,089,139 to Moffa et al. ("*Moffa*") and U.S. Patent No. 4,089,139 to Persson ("*Persson*").

I. 35 U.S.C. § 103(a) Rejection

Applicant respectfully requests withdrawal of the rejection of claims 24, 27-35, and 38-46 as being unpatentable under 35 U.S.C. § 103(a) over *Celada* in view of *Moffa* and *Persson*.

- A. The cited references do not disclose or suggest, among other things, "prefabricating away from a predetermined location of the plant site for the direct smelting vessel, a base module, an intermediate module, and an upper module to be brought together to form the vessel . . . , transporting the prefabricated modules to the predetermined location and depositing sequentially the base module, the intermediate module, and the upper module on top of one another . . . , [and] joining the modules together . . . to form a unitary direct smelting vessel"**

Independent claim 24 has been amended to incorporate subject matter from dependent claims 25, 26, 36, and 37. Specifically, independent claim 24 recites a

“method of constructing and thereafter installing at a direct smelting plant site a smelting unit comprising a direct smelting vessel,” and the method includes, among other things:

prefabricating away from a predetermined location of the plant site for the direct smelting vessel, a base module, an intermediate module, and an upper module to be brought together to form the vessel, each module comprising a cylindrical vessel wall section formed of steel plate,

transporting the prefabricated modules to the predetermined location and depositing sequentially the base module, the intermediate module, and the upper module on top of one another by depositing the intermediate module onto the base module and connecting the intermediate module to an upper part of the base module, and by depositing the upper module on an upper part of the intermediate module and connecting the upper module to the upper part of the intermediate module,

joining the modules together by one or more continuous horizontal circumferential welds between successive cylindrical wall sections of the modules to form a unitary direct smelting vessel,

prefabricating away from said predetermined location a plurality of tower modules to be brought together to form a vessel access tower that extends about the vessel at the completion of installation,

transporting the prefabricated tower modules to the predetermined location, and

depositing the prefabricated tower modules sequentially on top of one another and joining them together to form the tower, wherein the base and intermediate modules of the vessel and adjacent tower modules are installed prior to the installation of the upper module of the vessel.

Celada discloses an ore-treating apparatus including a sponge iron reactor 14 including a chamber 10 in which iron ore 12 is reduced to sponge iron. (*Celada*, Title and col. 2, ll. 68-70.) *Celada*, however, is silent regarding the construction and installation of the reactor 14. Thus, *Celada* does not disclose or suggest “prefabricating

away from a predetermined location of the plant site for the direct smelting vessel, a base module, an intermediate module, and an upper module to be brought together to form the vessel . . . , transporting the prefabricated modules to the predetermined location and depositing sequentially the base module, the intermediate module, and the upper module on top of one another . . . , [and] joining the modules together . . . to form a unitary direct smelting vessel,” as recited in independent claim 24.

Moffa discloses a segmented cylindrical reinforced plastic manhole structure for sanitary sewer systems and other underground utilities. (*Moffa*, Title and col. 1, ll. 12-16.)

Persson discloses a blast furnace with a weld 6 connecting a thicker portion 4 to a lower end of a furnace shell 5. (*Persson*, col. 2, ll. 3-10, and Fig. 1.)

The Office Action contends that:

It would have been obvious . . . to modify Celada et al’s structures to show modular members formed to stack one on top of each other to form a large hollow enclosure as taught by Moffa et al in order to enable fast and easy fabrication of smaller modules to be assembled at site since manufacturing the hollow enclosure as one piece would be cumbersome and costly, and having welding connecting the structures together would enhance the fastening together of contacting members at seams as taught by Pers[s]on.

(Office Action, p. 3, first paragraph.) Applicant respectfully disagrees for at least the following reasons.

Since *Moffa* relates to forming a plastic manhole structure, *Moffa* does not disclose or suggest prefabricating a base module, an intermediate module, and an upper module of a direct smelting vessel to be brought together to form the vessel.

Moffa is not analogous art. In order to rely upon a reference under 35 U.S.C. § 103, the reference must be analogous prior art. See M.P.E.P. § 2141.01(a). “Under the correct analysis, any need or problem known in the field of endeavor at the time of the invention and addressed by the patent [or application at issue] can provide a reason for combining the elements in the manner claimed.” M.P.E.P. § 2141.01(a). M.P.E.P. § 2141.01(a) also states that “a reference in a field different from that of applicant’s endeavor may be reasonably pertinent if it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his or her invention as a whole.” *Moffa* is not in the same field of endeavor as the present application and is also not reasonably pertinent to the particular problem addressed by Applicant. The present application relates to a method of constructing and installing a smelting unit including a direct smelting vessel at a direct smelting plant site. As noted above, *Moffa* discloses a plastic man-hole structure for a sanitary sewer system and other underground utilities, and is therefore not in the same field of endeavor as the present application, which is to construct and install a smelting unit including a direct smelting vessel. Also, *Moffa*’s plastic man-hole structure is not reasonably pertinent to the problems addressed by Applicant, such as being able to construct and install a smelting unit including a direct smelting vessel capable of use during smelting operations, as described for example in pp. 1-3 of Applicant’s specification. Accordingly, *Moffa* is not analogous art and thus has been improperly applied in the § 103 rejection.

Persson does not cure the deficiencies of *Celada* and *Moffa* noted above, nor was it cited for such disclosure. *Persson* was cited by the Office Action for the alleged

disclosure of “joining . . . together by one or more . . . welds,” as recited in claim 24. (Office Action, p. 2, last full paragraph.) However, like *Celada* and *Moffa, Persson* also does not disclose or suggest prefabricating a base module, an intermediate module, and an upper module of a direct smelting vessel to be brought together to form the vessel, transporting the prefabricated modules to the predetermined location, and joining the modules together to form a unitary direct smelting vessel. Accordingly, like *Celada* and *Moffa, Persson* does not disclose or suggest “prefabricating away from a predetermined location of the plant site for the direct smelting vessel, a base module, an intermediate module, and an upper module to be brought together to form the vessel . . . , transporting the prefabricated modules to the predetermined location and depositing sequentially the base module, the intermediate module, and the upper module on top of one another . . . , [and] joining the modules together . . . to form a unitary direct smelting vessel,” as recited in independent claim 24.

- B. The cited references do not disclose or suggest, among other things, “prefabricating away from said predetermined location a plurality of tower modules to be brought together to form a vessel access tower that extends about the vessel at the completion of installation, transporting the prefabricated tower modules to the predetermined location, and depositing the prefabricated tower modules sequentially on top of one another and joining them together to form the tower, wherein the base and intermediate modules of the vessel and adjacent tower modules are installed prior to the installation of the upper module of the vessel”**

As noted above, independent claim 24 has been amended to incorporate subject matter from dependent claims 25, 26, 36, and 37. Specifically, independent claim 24 recites “prefabricating away from said predetermined location a plurality of tower modules to be brought together to form a vessel access tower that extends about the

vessel at the completion of installation, transporting the prefabricated tower modules to the predetermined location, and depositing the prefabricated tower modules sequentially on top of one another and joining them together to form the tower,” as recited in independent claim 24. Similar elements were recited in previously pending claims 36 and 37.

The Office Action contends that “Celada as modified” discloses the elements of previously pending claims 36 and 37, but does not provide any specific support for this alleged disclosure. (Office Action, paragraph bridging pp. 3-4.) Applicant respectfully disagrees because the cited references do not disclose or suggest prefabricating a plurality of tower modules to be brought together to form a vessel access tower that extends about the direct smelting vessel at the completion of installation. The cited references also do not disclose or suggest transporting the prefabricated tower modules to the predetermined location and depositing the prefabricated tower modules sequentially on top of one another and joining them together to form the tower. Accordingly, the cited references do not disclose or suggest, among other things, “prefabricating away from said predetermined location a plurality of tower modules to be brought together to form a vessel access tower that extends about the vessel at the completion of installation, transporting the prefabricated tower modules to the predetermined location, and depositing the prefabricated tower modules sequentially on top of one another and joining them together to form the tower, wherein the base and intermediate modules of the vessel and adjacent tower modules are installed prior to the installation of the upper module of the vessel,” as recited in independent claim 24.

For at least the reasons provided above, independent claim 24 is patentable over the cited references. Claims 27-35 and 38-46 are also patentable over the cited references at least due to their dependence from independent claim 24.

II. New Dependent Claims 47 and 48

Applicant also submits that new dependent claims 47 and 48 are in condition for allowance. New claims 47 and 48 are allowable at least due to their dependencies from independent claim 24.

III. Conclusion

Applicant respectfully submits that the pending claims are in condition for allowance.

The Office Action contains characterizations of the claims and the related art with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

In discussing the specification, claims, and drawings in this Reply, it is to be understood that Applicant is in no way intending to limit the scope of the claims to an exemplary embodiment described in the specification or abstract and/or shown in the drawings. Rather, Applicant is entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

In view of the foregoing remarks, Applicant submits that this claimed invention is neither anticipated nor rendered obvious in view of the prior art references cited against

this application. Applicant therefore requests the reconsideration and reexamination of the application, and the timely allowance of the pending claims.

If the Examiner believes a telephone conversation might advance prosecution, the Examiner is invited to call Applicant's undersigned representative at 202-408-4129.

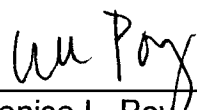
Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: October 14, 2011

By: _____


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